

Title Effect of leaf treatments on flower quality and shelf life in Asiatic lily
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Abstract

Lily (*Lilium* spp.) is one of the most important cut flower species on the international market. It ranks 5th after rose, tulip, spray chrysanthemum and gerbera for total sales at the flower market of Aalsmeer. The improvement and conservation of flower quality attributes during postharvest management is a very important target in the flower industry. Previous small plot trials carried out at the experimental farm of CRA-VIV Pesca (Italy) showed the positive effects of pre-harvest leaf treatments with sugars, salts and antioxidant compounds on postharvest quality (flower size and color, inflorescence height and longevity) in Asiatic and Oriental Lily. In forward studies, the effects of leaf treatments were evaluated on large scale experiments carried out in a commercial nursery as explained in this article. Two Asiatic cultivar ('Fangio' and 'Cavalese') were grown in different rows in the same greenhouse. Treatments applied were: vitamin C (2 g/L); citric acid (1 g/L); sucrose (2 g/L); K₂SO₄ (2 g/L). Application of sucrose and K₂SO₄ confirmed the positive effects of leaf treatments on stem height, tepal length, tepal color, and inflorescence vase life obtained in previous small plot trials. Also application of antioxidant compounds, such as vitamin C and citric acid, improved postharvest quality attributes in both cultivars: in particular, citric acid significantly improved stem height and diameter and vase life in 'Cavalese' and vase life in 'Fangio'; vitamin C significantly improved stem height in 'Cavalese' and vase life in both cultivars. Moreover, the treatments with antioxidant compounds improved tepal color quality. These trials, carried out in a commercial nursery, demonstrate that growers can use these simple and inexpensive treatments to improve important qualitative traits in Asiatic lily.